



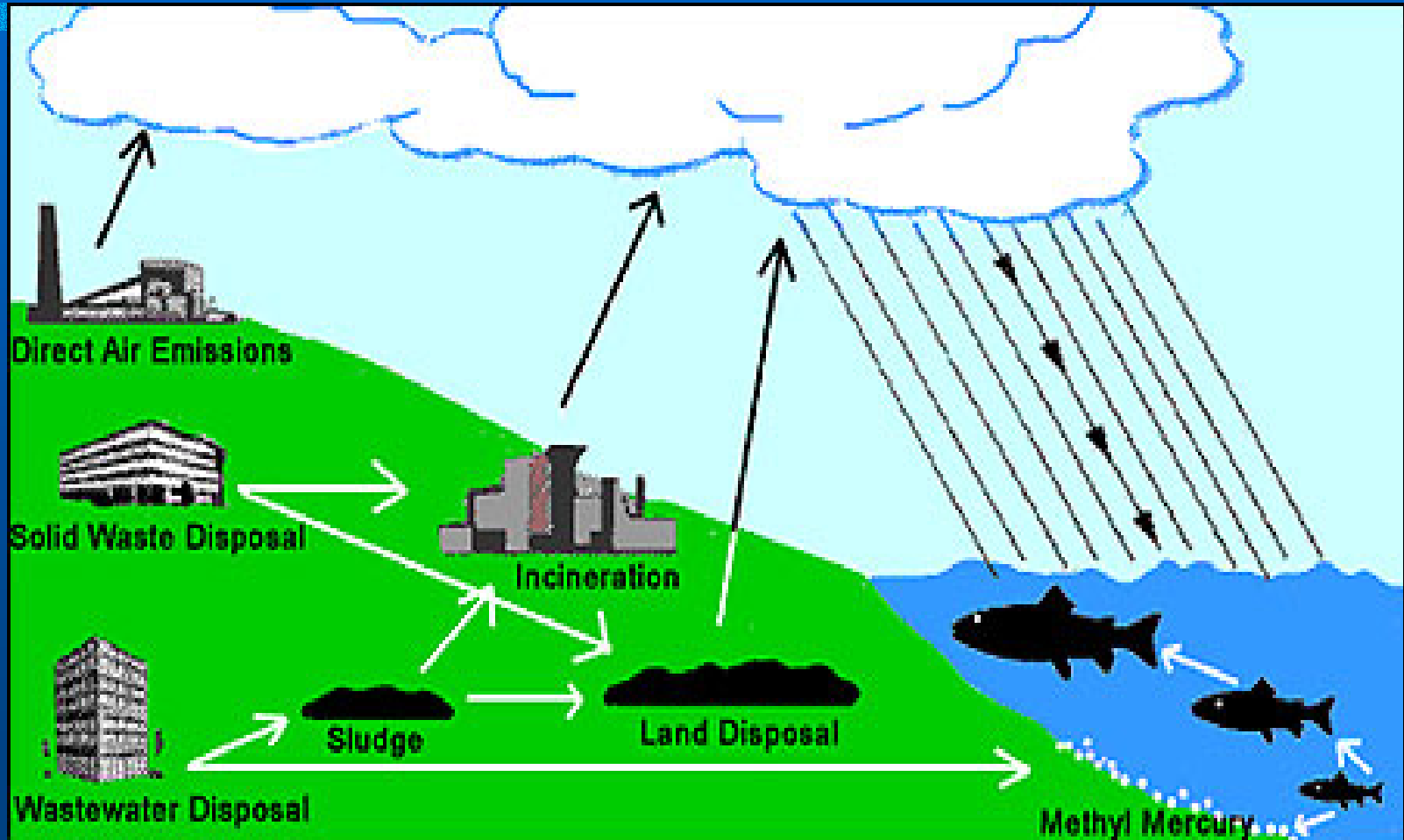
Project Overview

Mercury Abatement Program

Naval Institute for Dental and Biomedical Research

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Industrial Mercury Cycle





Man

**Mercury
Wastes**

**Industrial
Mercury Pollution
Cycle**

**Food
Chain**

Waterways

Bacterial Conversion:
 $\text{Hg}^0/\text{Hg}^+ \longrightarrow \text{CH}_3\text{Hg}^+$

Sources of Dental Hg



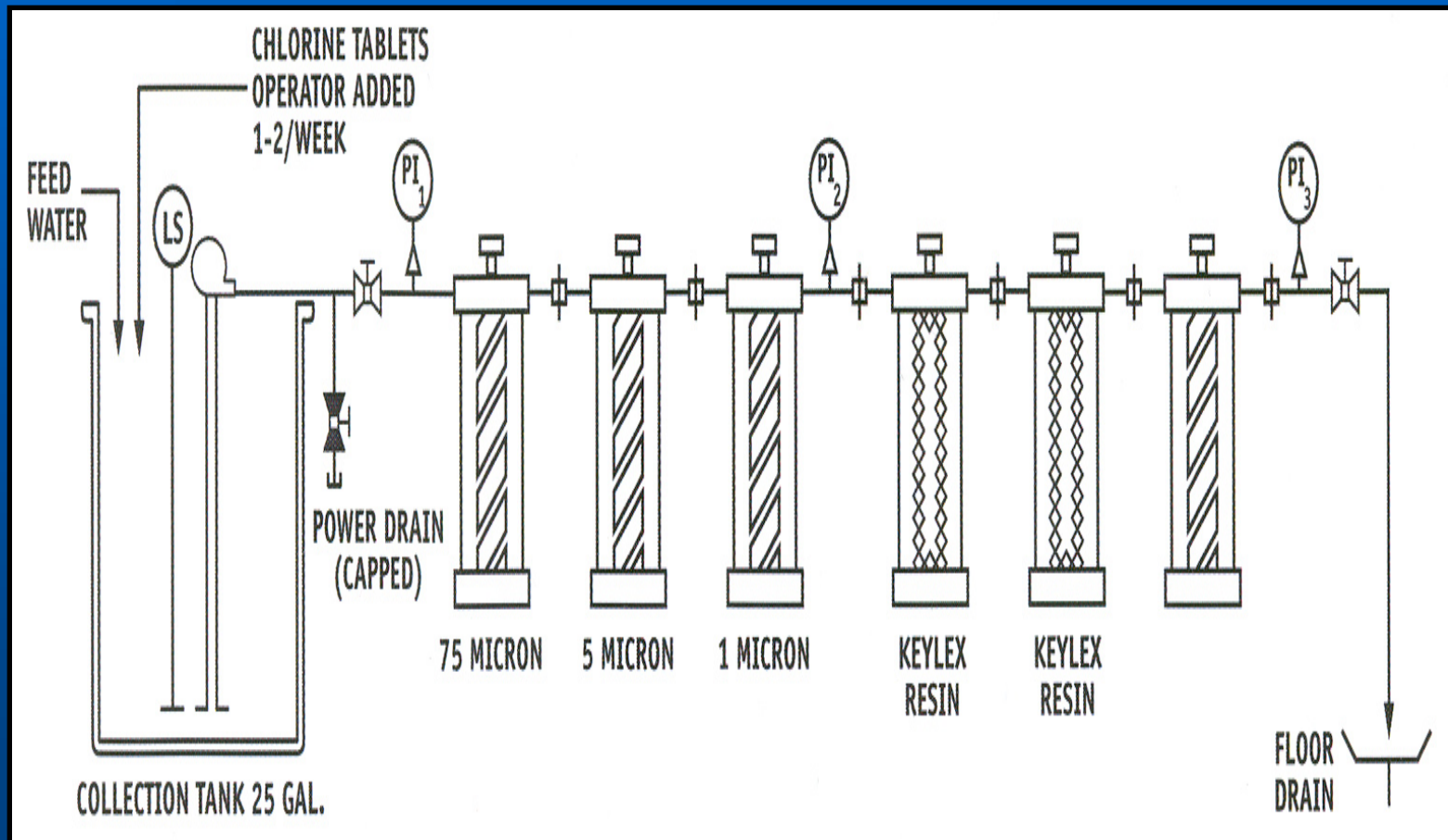
- **Through Suction Line during insertion or removal of Fillings**
- **Excess Scrap Amalgam**
- **Retained in used amalgam capsules**
- **Sink rinsed dental unit amalgam traps (accumulates in P-traps)**

Navy Dentistry's Position



- Chief, Dental Corps tasked NIDBR as lead agent in mercury abatement
 - to reduce environmental impact of Navy Dentistry worldwide
- 5 Year Project funded by BUMED (NEHC Coordination & Oversight)
 - to install appropriate Hg abatement systems in every DTF worldwide

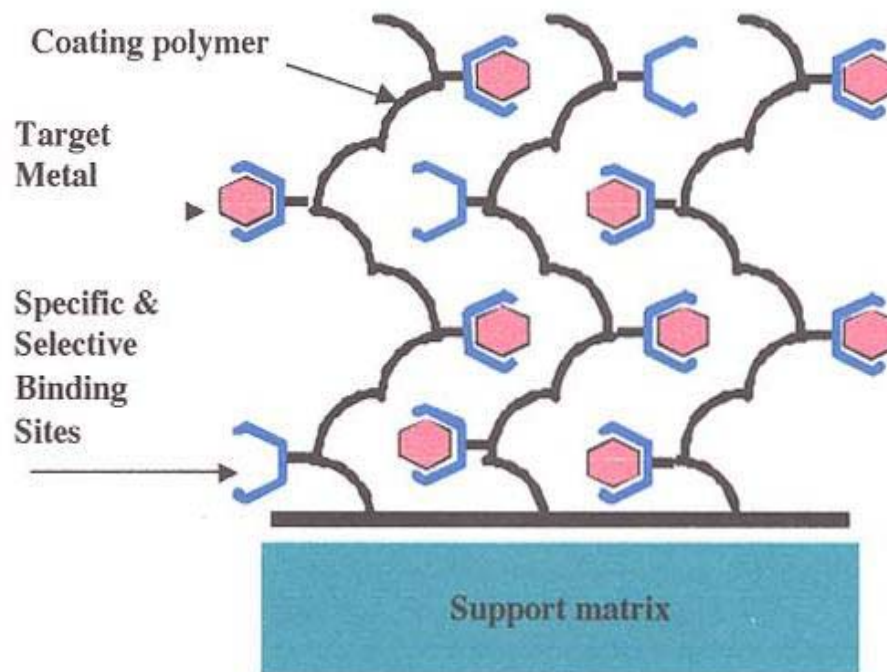
Hg Removal System



Hg⁺⁺ Specific Binding Resin



Keyle:XTM





Schedule / Milestones for 2003

- **Phase 1: Completed Survey of CONUS NDC/DTF's**
(115 / 128 DTF's completed: 90%)



- **Phase 2: Equipment Received or Ordered**
(115 / 128 DTF's: 90%)



- **Phase 3: Installation Completed**
(41 / 128 DTF's completed to date: 32%)



- **Goal: 95% CONUS NDC/DTF's Installations completed**

Status by NDC (CONUS)



NDC	Surveyed	Equipment	Installed
Gulf Coast	15	15	15
Bethesda	15	15	2
Pendleton	14	14	11
Lejeune / Parris Is.	11	11	0
SW – San Diego	17	17	8
SE – Jacksonville	12	12	0
NW – Bremerton	5	5	3
Mid-Atlantic, Norfolk	9	9	1
NE – New London	13	13	0
Hospitals	2	2	1

Research Goals



- **Characterize local wastewater effects**
- **Describe optimum combination of waterline disinfection and waste removal**
- **Cooperatively Develop commercial mercury removal filter for single dental chair (CRADA) with DentaleEZ, Inc.**
- **Apply single dental chair technology to shipboard and mobile dental units.**